

Is It Going to Rain Today?



Understanding the Weather Forecast.



Every day people check the weather forecast to plan their daily activities, but do they really understand what the meteorologist is telling them? This brochure is intended to develop a better understanding of those forecasts. It is designed to help people make informed decisions about travel plans, sports practices and events, campouts, or other outdoor activities before hazardous weather occurs.

The National Weather Service (NWS) is the federal agency charged with providing weather services to the nation. It is the official source of watches, warnings, and advisories for hazardous weather. Weather forecasts and warnings can be received directly from the NWS through its nationwide network of NOAA Weather Radio

This brochure will use terminology as defined by the NWS; forecast products issued by countries other than the US have different criteria. Forecasters outside the NWS may use different terms or place a different meaning on weather terms.

Visit the NWS on the internet at:
<http://www.nws.noaa.gov>

Weather Forecast Terminology

The basic weather forecast includes the following weather elements: precipitation, probability of precipitation, sky condition, temperature and wind. Forecasts describe the weather in 12-hour increments such as today, tonight, and tomorrow. Forecasters often use descriptive terms to convey the forecast message. While these terms may be subjective, the NWS attempts to standardize them. Details on precipitation probabilities, sky condition , and wind are provided in subsequent sections.

Precipitation Probabilities

The probability of precipitation forecast is one of the least understood elements of the weather forecast. The probability of precipitation has the following features:

- ▶ The likelihood of occurrence is in percent.
- ▶ A measurable amount is defined as 0.01 inch or more.
- ▶ The measurement is of liquid precipitation or the water equivalent of frozen precipitation.
- ▶ The probability is for a specified time period.
 - ▶ The forecast is for a given point.

A measurable amount of rain usually produces enough runoff for small puddles to form. For example, if a forecast for a county says there is a 40% probability of showers this afternoon, there is a 40% chance of rain at any point in the county from noon to 6 p.m. The point probability of precipitation is determined by multiplying the chance of occurrence by the expected area coverage. Two examples giving the same result are:

▶If the forecaster was 80% certain that showers would develop but only expected them to cover 50% of the forecast area, there would be a 40% chance that rain would occur at any given point.

▶If a widespread area of precipitation with 100% coverage was approaching, but the forecaster was only 40% certain that it would reach the forecast area this would also result in a 40% chance of rain for any given point.

The following terms of duration imply a high probability (80-100%) of occurrence: brief, periods of, occasional, intermittent, frequent. Terms for uncertainty are in the following table.

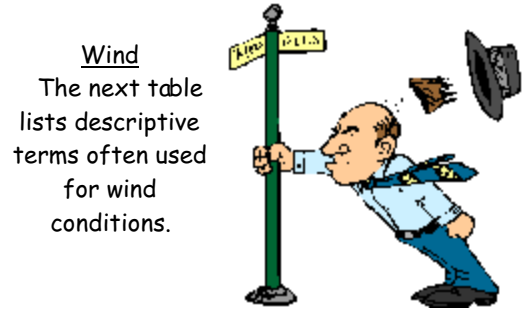
POP	/	Terms Used
0%		None
10%		Slight Chance; Isolated
20%		Slight Chance
30-50%		Chance; Scattered
60-70%		Likely; Numerous
80-100%		
POP = Probability of Precipitation		



Sky condition

The predominant or average sky cover for the forecast period is also given. This percentage of the sky is the amount covered by opaque clouds, the type that do not allow other clouds, or blue sky to be visible through or above them. The following table lists descriptive terms for sky conditions.

Term	/	Average sky cover
Cloudy		90-100%
Mostly cloudy		70-80%
Partly cloudy or Partly sunny		30-60%
Mostly clear or Mostly sunny		10-30%
Clear or sunny		0-10%
Fair		Less than 40% cloud cover, no precipitation, and no weather extremes.



Wind
The next table lists descriptive terms often used for wind conditions.

Sustained wind speed	/	Term
0-5 mph		Light or light and variable
5-15 mph		-----
15-20 mph or 15-25mph		Breezy in mild weather Brisk in cold weather
15-25 mph or 20-30 mph		Windy
25-35 mph or 30-40 mph		Very windy
40 mph or greater		High, strong, damaging.

Other weather terms
The preceding sections include the definitions of many hazardous weather features. The following terms are frequently used in weather forecasts and warnings:

Cold Air Funnel
A funnel cloud that can develop from a small shower or thunderstorm. The air aloft is usually cold and other conditions are favorable. Cold air funnels rarely become tornadoes, and when they do, they are almost always weak tornadoes.

Crest
The highest level of a flood wave as it passes a point on a river or stream

Degree day
The amount of heating or cooling needed for a building is measured by using 65°F as a baseline. To compute heating or cooling degree days, take the average temperature and compare it to 65°F. An average daily temperature of 50°F yields 15 heating degree day units, while an average temperature of 75°F yields 10 cooling degree day units.

Dew point
A direct measure of atmospheric moisture. The dew point is the temperature to which air must be cooled in order to reach saturation, assuming the pressure and moisture content are constant. Relative humidity is the ratio of moisture measured by the dew point to the total possible at a given temperature.

Downburst
A strong downdraft from a thunderstorm resulting in an outward burst of damaging winds on or near the ground. Downburst winds are often 50-100 miles per hour, and in a few cases are 100-150 miles per hour.
▸Microburst
A small downburst affecting an area less than 2.5 miles in diameter with peak winds lasting less than 5 minutes.
▸Macroburst

A large downburst affecting an area greater than 2.5 miles in diameter with peak winds lasting 5 minutes or longer.



Flood stage
The level or stage where a stream overflows its banks, or the stage where the overflow of a stream begins to cause damage.

Rain versus showers
Rain is a nearly steady and uniform fall of precipitation over an area. Showers are intermittent and/or scattered convective rainfall of varying intensity.

Sleet
Sleet or ice pellets are solid grains of ice formed from the freezing of rain or the refreezing of melted snow.

Tornado
A rotating column of air, extending from a towering cumulus or cumulonimbus, in contact with ground. The column may or may not be visible all the way from cloud to ground.

Waterspout
In general , a tornado occurring over water. Specifically, a waterspout is a small, relatively weak rotating column of air over water beneath a towering cumulus or cumulonimbus cloud



Wind chill
The apparent temperature that describes the combined effect of wind and low temperature of exposed skin.

The author would like to thank the NWS employees who contributed to this brochure.

Listen to NOAA Weather Radio for the latest watches, warnings, and advisories.